

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION**

UNITED STATES OF AMERICA,)
)
 Plaintiff,)
)
 v.)
)
 AMEREN MISSOURI,)
)
 Defendant.)
 _____)

Case No. 4:11-CV-00077-RWS

UNITED STATES' TRIAL BRIEF

Introduction

Sulfur dioxide pollution from Rush Island Unit 1 increased by massive amounts in 2008. The same thing happened at Rush Island Unit 2 in 2011. The central question in this case is why.

The answer to that question is found in Ameren's own data and documents. Ameren spent \$34 million to overhaul the boiler at Rush Island Unit 1 in 2007. Three years later, it did the same at Unit 2, spending more than \$38 million. The two overhauls were among the most expensive projects Ameren has ever performed.

That \$72 million was not wasted. Ameren spent years studying the problems in its boilers and developing plans for the necessary replacements. Ameren decided to replace multiple major components – in their entirety – at each unit. Ameren redesigned the components so that they would perform better than the old ones could have, even when new. Ameren expected that the boiler upgrades would reduce outages and deratings caused by pluggage and boiler tube leaks and – for Unit 2 – allow the units to generate more electricity (more megawatts) while operating.

Before replacing the economizer, reheater, and air preheater at each unit, Ameren went through a rigorous cost-benefit analysis. By company policy, the projects had to be “justified.” The projects had to pay for themselves over time, and the way they did so was by avoiding future generation losses. For units like Rush Island 1 and 2, which operate virtually every hour they are available, every outage and derating was a lost opportunity to sell electricity – and thus a loss of revenue. In justifying the projects, Ameren calculated that it would more than cover the cost of the work by selling more electricity. That justification was submitted to a series of corporate executives. Ultimately, the parent company CEO provided the final approval, and the projects went forward.

Generating more electricity means more than money for Ameren. It also means burning more coal and polluting more. Before beginning its major boiler modifications, Ameren should have done a pre-construction analysis and then obtained Prevention of Significant Deterioration (“PSD”) permits and installed pollution controls for SO₂. As this Court explained, “PSD’s value is in ensuring compliance pre-project, so that increases in pollution can be prevented...” Doc. No. 724 (“Omnibus SJ Decision”) at 31. Ameren failed to comply. Had it done so, the pollution from Rush Island would have been reduced by more than 90%, and the people of St. Louis and other downwind communities would be breathing easier today.

Statement of the Issues Before the Court

The question for the Court is whether the boiler upgrades were major modifications under the PSD program. Answering that question requires deciding two issues:

1. Was the work at Rush Units 1 and 2 routine maintenance?
2. Did the projects result in increased pollution from the units?

For each issue, the Court has established the law that will govern. The trial evidence will make clear that these boiler projects were far from routine maintenance, that they resulted in emissions increases far in excess of the 40-ton threshold for triggering PSD, and that Ameren should have expected these increases.

Routine Maintenance

This Court has established the legal standard for the routine maintenance determination. The analysis begins by recognizing that the routine maintenance exemption “is a narrow one and is generally limited to *de minimis* circumstances.” Omnibus SJ Decision at 8. The burden of proving the applicability of the exclusion rests with Ameren. *Id.* at 10. With that background, the Court examines each project, “taking into account the 1) nature and extent, 2) purpose, 3) frequency, and 4) cost.” *Id.* For the frequency analysis, the “most relevant inquiry” is how often a project is done at individual units in the industry, not how many times similarly-large projects have been done across the industry. *Id.* Finally, major component replacements should be considered together as a single project where, after a case-by-case, common sense review, “it appears that the work was done as part of one project.” *Id.* at 15. In determining whether the work was a single project, the Court looks to whether it was planned together, budgeted together, performed together, and done for the same purpose. *Id.*

The trial will demonstrate that the Parties largely agree on the relevant facts. The remaining question is simply whether the largest and most expensive project in Rush Island history, and indeed one of the largest projects Ameren has ever undertaken, can qualify as routine under the law. That narrow exemption cannot accommodate what Ameren called the “most significant outage in Rush Island history” and the “major refurbishment” of the boilers.

See Pl. Ex. 31 (email describing the Unit 1 outage; the Unit 2 outage three years later was of similar scope); Pl. Ex. 6 at AM-00072912.

Emissions Increase

To prevail, the United States must show either (1) that Ameren should have expected an emissions increase related to the project; or (2) an increase related to the project actually occurred. Omnibus SJ Decision at 17, 33. If an increase is projected or actually occurs, Ameren has the burden to demonstrate that any portion of that emission increase can be excluded under the demand growth exclusion. *Id.* at 22. To do so, Ameren must show both that the emissions increase could have been accommodated during the chosen baseline period *and* that the increase was unrelated to the project at issue. *Id.* at 21. The Court has ruled on summary judgment that Ameren had presented no evidence that demand was the cause of the increased emissions, so the only question remaining is whether Ameren can point to some other factor as the sole cause of the increased emissions. *Id.* at 23-24.

The emissions question also begins with undisputed facts. First, pollution *did* increase after the projects at issue. There is no dispute over the pollution during the times relevant for PSD: the baseline and the highest post-project year. The undisputed actual emission values (in tons of SO₂ per year) are:

| | Baseline | Post-Project | Increase |
|---------------|-----------------|---------------------|-----------------|
| Unit 1 | 14,874 | 15,539 | 665 |
| Unit 2 | 14,288 | 16,458 | 2170 |

See, e.g. Def. Ex. OM. Second, Ameren's own internal modeling, done for business purposes like buying coal, projected that emissions would increase after the work.

The only question remaining is whether the increase that Ameren expected – and got – was related to the \$30+ million the company spent at each unit to improve operations. It was. The evidence will show that the projects would be expected to and did reduce outages and derates caused by the plugged and deteriorated old components, allowing the unit to generate more electricity – which results in more pollution. For Unit 2,¹ the work would also increase the unit's capability to generate megawatts, again meaning more coal could be burned and more pollution would result.

Ameren should have expected a pollution increase related to the project, and it got one. Either is sufficient to make the boiler upgrade projects major modifications under the law.

Overview of the United States' Case

The United States will present its case through testimony from expert witnesses with experience in the utility industry and experienced EPA technical staff. But the touchstone of the United States' evidence will be Ameren's own words: the documents that company engineers and executives wrote and the testimony that they gave in deposition. At trial, Ameren will try a variety of gambits to say that its own documents, data, and prior testimony are irrelevant to the questions before the Court and should be ignored. Ameren has no choice but to do so; its own admissions are compelling.

The documents, data, and deposition testimony from Ameren's engineers will show:

1. The extent of the problems at Rush Island, specifically related to the components to be replaced.
2. Ameren's expectations that the replacements would improve unit performance.

¹ At Unit 2, the company updated its economic justification to incorporate the benefits of increased capacity, based on the increase in capacity it actually achieved from the boiler modifications at Unit 1. Our emissions calculations for Unit 1 do not rely on increased capability, although company documents and data show they got such an increase.

3. Ameren's confirmation that its expectations were met, and even exceeded, by the units' performance after the boiler upgrades.
4. The emissions increases that Ameren reported to EPA.

The United States' trial witnesses will present those documents and highlights of the deposition testimony, along with their own analyses.²

The United States separately filed a disclosure of the subject of each of its potential witness's testimony. Here we describe how the testimony from our four Will Call witnesses will fit together at trial.

Power plant expert William Stevens. As part of a lengthy career in power plant design, construction, and operations, Mr. Stevens was personally involved in the design of the Rush Island plant. Mr. Stevens will describe how a coal-fired power plant works and provide the specifics of the work performed in each outage, including how the components at issue were re-designed to improve the unit. Mr. Stevens will detail the massive effort required to open up the boiler and remove and replace several major components weighing hundreds of thousands of pounds each. He will also put that work into context by describing how these major component replacements compare to typical boiler maintenance.

Power plant performance expert Robert Koppe. Mr. Koppe first started working in the utility industry nearly five decades ago. He spent 25 years working as an industry consultant on issues related to power plant performance. In this case, he examined Ameren's own documents and data and assessed how the boiler overhauls at issue should have been expected to impact the performance of the Rush Island units. Mr. Koppe concludes that the company should have

² The Ameren deposition testimony will largely be presented through designations submitted to the Court on paper. However, we plan to present small portions of key testimony by reading it aloud during trial or playing video of the deposition.

expected, did expect, and got increases in availability from the boiler upgrades. He also concludes that Ameren should have expected, did expect, and got an increase in capability from the boiler work at Unit 2. Finally, Mr. Koppe rebuts Ameren's contention that efficiency improvements would mean burning less coal than before the project. Mr. Koppe provides the results of his performance assessment to Dr. Ranajit Sahu, who then calculates the additional SO₂ that would result from the projects.

System modeling expert Ezra Hausman. Dr. Hausman is an expert on the computer models that utilities use to plan and make future decisions – everything from how much coal to buy to whether to build a new unit. These computer models are known as production cost models. Dr. Hausman used Ameren's own production cost model and its own data to prove two things. First, if the Rush Island units gain an extra hour of availability or an extra megawatt of capacity, they will operate more, burn more coal, and emit more SO₂. The units are baseload, low-cost generation – if they can generate more, they will generate more. Second, he will prove that much of the predicted pollution increase in Ameren's modeling is due to the performance improvements at the units – not the result of external factors like demand. In other words, Ameren's own modeling shows an increase in pollution related to the projects, an amount that far exceeds the 40-ton threshold for triggering PSD.

Emissions calculation expert Ranajit ("Ron") Sahu. Building on the technical analysis provided by other witnesses, and his own review of Ameren data and documents, Dr. Sahu will present the United States' emissions calculations. Dr. Sahu has performed Clean Air Act emissions calculations hundreds of times – for *both* government entities and private companies in several different industries. Dr. Sahu will show that the projects caused an increase in emissions sufficient to trigger PSD.

Indeed, as Dr. Sahu will show, it is not a close call. It takes just 21 hours of additional operation, or two additional MW of capacity, for a Rush Island unit to surpass the 40-ton threshold that triggers the need for a PSD permit. The trial evidence will show that the company should have expected much larger performance improvements. By running more, the units burned more coal and produced more pollution – just as Ameren should have expected.

Overview of Ameren's Case

Based on discovery in this case and reviewing Ameren's Trial Exhibit List, we expect these primary arguments:

First, that any increase or expected increase in pollution is unrelated to the project. In other words, it is merely a coincidence that the two biggest outages in Rush Island history were each followed by a massive increase in pollution. There was no coincidence. Instead, as described above, the boiler upgrades allowed the units to run more, generate more, burn more coal, and release more pollution. Ameren cannot support its assertion of the demand growth exclusion. *See* Omnibus SJ Decision at 20-21 (“But if the unit undergoes modifications that allow it to run more during the daytime hours tha[n] it could before, it cannot be said that the increase emissions were merely a coincidence or unrelated to the modification.”).

Second, that efficiency improvements at the unit would result in burning *less* coal, overcoming the effect of improved availability and capacity. This argument ignores a central, undisputed fact in this case: emissions at each unit actually increased after each of the projects. Ameren's story that efficiency would offset the emissions related to the performance improvements does not comport with this simple reality. Moreover, Ameren also ignores the fact that improved efficiency can result in an overall increase in operations by making the units cheaper to run.

Third, that Ameren did its own emissions calculations before performing the Unit 2 outage and concluded that the 2,000-ton pollution increase it predicted could be excused by the demand growth exclusion. (Ameren admits it did no such calculation for Unit 1). But the evidence will show that Ameren did not begin its PSD analysis until shortly before the outage began. And Ameren did not complete the analysis until after the work had begun.³ Moreover, the modeling that Ameren relied on for its emissions projection failed to take into account all of the improvements from the project. Even so, Ameren projected a 2,000-ton emissions increase. It then excluded the entire increase based on a reading of the demand growth exclusion that this Court has already said is incorrect. *See* Omnibus SJ Decision at 21. Other than its erroneous demand growth exclusion, Ameren gave no other basis in its reasonable possibility analysis to claim that the projected emissions did not result from the projects at issue in this case.

Finally, that coal-fired units and the utility system are tremendously complicated. Whether explicit or implicit, the message will be that operations are too complicated to accurately predict future emissions. Of course, as the Court will hear, utilities like Ameren *do* make such predictions all the time. And Ameren cannot use a cloak of complexity to hide from the application of the law. Finally, there is nothing complicated about the core facts that (1) Ameren performed the largest boiler upgrades in Rush Island history and (2) pollution increased. That increase in pollution is the direct result of the increase in operations enabled by the projects.

³ As the Court will hear at trial, even that analysis was not the end of the story. Ameren's final attempt at the calculations was not completed until well after the project concluded – and after the United States filed the original complaint.

Potential Issues to Be Addressed at Trial

The United States is separately filing two motions *in limine*.⁴ Below we identify and provide the necessary legal background for additional issues that may arise at trial.

Admissibility of Ameren Deposition Testimony

Pursuant to the Court's Pre-Trial Order, Doc. No. 728, the United States has designated testimony from 24 Ameren employees and the company's testimony in several Rule 30(b)(6) depositions. (In some instances, the deponents no longer worked for Ameren at the time of the deposition). At the Court's direction, the United States provided Ameren with a list of those deponents on July 8. *See* Transcript of July 7, 2016 Telephonic Status Conference at 6-9. Ameren has not yet responded whether they object to the designations.

To the extent Ameren objects to admission of its employees' depositions, the Court has authority to allow their admission, whether or not the employees testify live. The designations of employees are admissible as statements of a party opponent under Fed. R. Evid. 801(d)(2).⁵ The depositions are not hearsay because they were made by employees "relating to a matter within the scope of [their] employment." *Gulbranson v. Duluth, Missabe & Iron Range Ry. Co.*, 921 F.2d 139, 142 (8th Cir. 1990). The availability of a witness is not relevant to whether the statement qualifies as a party admission. *See* Fed. R. Evid. 801(d) (excluding certain statement from definition of hearsay). Finally, the United States' expert witnesses relied on the depositions,

⁴ These motions seek to prevent Ameren from revisiting issues that have already been decided by the Court and to exclude improper summary evidence offered by Ameren expert witness Jerry Golden, respectively. The United States also filed a motion to strike the untimely expert supplement of Ameren expert witness Michael King.

⁵ Ameren has already conceded that designations are proper for the company's Rule 30(b)(6) testimony. As Ameren counsel said in the July 7 telephonic status conference, "the 30(b)(6) witnesses are easy." Transcript of July 7, 2016 Telephonic Status Conference at 8:7-9; *see also* Fed. R. Civ. P. 32(a)(3).

making it appropriate for the United States to submit them, and present short excerpts, during our case-in-chief.

Expert Testimony from Lay Witnesses

While Ameren has not yet disclosed the subject matter of its fact witness's testimony, past statements and declarations from Ameren suggest that the company will be seeking undisclosed opinion testimony from its fact witnesses.⁶ This is improper and should not be allowed.

The rules of civil procedure require all opinion testimony be disclosed in advance. Here, Ameren has disclosed no opinion testimony for any of its potential fact witnesses. Thus any opinion testimony from these witnesses is governed by Fed. R. Evid. 701, which limits opinion testimony by lay witnesses to opinions that are:

- (a) rationally based on the witness's perception;
- (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and
- (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

As the Eighth Circuit has explained, lay opinion testimony is limited to helping the Court "understand the facts about which the witness is testifying and not to provide specialized explanations or interpretations that an untrained layman could not make if perceiving the same acts or events." *United States v. Espino*, 317 F.3d 788, 797 (8th Cir. 2003).

The United States will raise this objection at trial, as necessary.

⁶ As Ameren counsel noted in arguing that the company's fact witnesses should not be sequestered, "Ameren's fact witnesses . . . are all engineers and . . . live in this specialized world." Transcript of July 7, 2016 Telephonic Status Conference at 16:17-19.

Testimony from Fact Witnesses without Personal Knowledge

It is fundamental that a fact witness may only testify where he or she “has personal knowledge of the matter.” Fed. R. Evid. 602. A witness without personal knowledge cannot simply adopt another’s view or review company records and testify on that basis. *See Kemp v. Balboa*, 23 F.3d 211, 212-13 (8th Cir. 1994) (finding testimony should be struck where fact witness relied solely on reading medical records); *United States v. Davis*, 596 F.3d 852, 856 (D.C. Cir. 2010) (witness cannot rely on another’s report of an incident). Such testimony would run afoul of both Rule 602 and the prohibition against hearsay. *See United States v. El-Mezain*, 664 F.3d 467, 495 (5th Cir. 2011) (“The personal knowledge requirement and the hearsay rule are cut at least in part from the same cloth.”) (internal citations omitted).

Here there is reason to expect that Ameren may present witnesses without personal knowledge and attempt to evade Rule 602. For instance, long-time Ameren employee and company Will Call witness David Boll testified at his deposition that he was not involved in predicting how units would operate in the future, following a component replacement. Yet Ameren submitted a declaration in which Mr. Boll stated that he did not believe projects like those at issue would result in additional generation. *See* Doc. No. 568-4, Ex. A2 to Ameren’s Summary Judgment Motions, at ¶15. Where Mr. Boll and other Ameren witnesses have disclaimed personal knowledge on a particular topic, they should not be allowed to testify at trial.

The United States will raise this objection at trial as necessary.

Conclusion

Major boiler components at Rush Island were causing repeated generation losses – outages, deratings, and reduced capability. Ameren spent more than \$70 million to replace those components, and it rightly expected performance to improve and generation to increase. Ameren relied on that increased generation in justifying the costs to its management – all the way to the parent company CEO. Ameren got the additional generation it sought, but burning additional coal resulted in air pollution increases an order of magnitude larger than that required to trigger PSD – just as the company should have expected.

Ameren violated the Clean Air Act when it upgraded the plant without also upgrading its pollution controls. At the close of the evidence, the United States will ask the Court to find that Ameren's major boiler projects were major modifications under the applicable PSD rules.

Dated August 8, 2016

Respectfully submitted,
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CERTIFICATE OF SERVICE

I hereby certify that on August 8, 2016, I served the foregoing with the Clerk of Court using the CM/ECF system, which will cause an electronic copy to be served on counsel of record.

s/ James W. Beers, Jr.
JAMES W. BEERS, JR.